

AIR FORCE FELLOWS

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# THE NEED FOR THE NEXT SPECIAL OPERATIONS FORCES' MOBILITY AIRCRAFT

By

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## **Abstract**

The proliferation of threat systems and Anti-Access, Area Denial (A2/AD) strategies make performing special operations forces' (SOF) air mobility missions increasingly complicated and limit the capability to defeat air defenses and penetrate into denied airspace. Combined with an aging inventory, ill suited to evading these threats, Air Force Special Operations Command (AFSOC) and the United States Special Operations Command (USSOCOM) must look to technology to defeat the more modern threat systems and anti-access strategies. The best answer to penetrate future, denied regions is in stealth or low observable (LO) technology. National strategy documents already prioritize the SOF mission and identify the need for maintaining a very capable SOF. Current fiscal realities and a cut in defense spending seem to discourage talk of funding a new capability or procuring a new platform. However, the case for improving SOF enablers and funding SOF programs is well documented in recent strategic guidance and budget priority documents. Regardless of the fiscal situation, SOF will get the support it needs from national leadership to maintain its dominance in asymmetric warfare. The U.S. needs to invest in procuring and developing the next generation LO SOF mobility aircraft.

## **Introduction**

In the next decade, the nation must ask itself, what event could arise that would require U.S. forces to embark on a no-fail mission? If an event, such as the Iranian Hostage Crisis of 1979 were to unfold, does the United States (U.S.) have the assets required to conduct a hostage rescue, deep into denied, hostile territory? With a large armada of aircraft to suppress enemy air defenses, the U.S. can accomplish such a rescue. However, a large fleet of warplanes can have unintended consequences. In an unstable region, or where one does not want to provoke an adversary into all out war, the U.S. needs the ability to clandestinely insert Special Operations Forces (SOF) to accomplish the mission. As such, Air Force Special Operations Command (AFSOC) aircrews are responsible for delivering SOF, deep into denied territory to support the mission. The current fleet of AFSOC mobility platforms are postured and ready to conduct such missions today, should the need arise. However, it is my assessment, that in the not too distant future, AFSOC aircrews will not be able to accomplish their mission due to complex enemy anti-access, area denial strategies and a lack of SOF aircraft acquisition to counter emerging, complex threats. The United States needs to develop and acquire the next generation low-observable (LO) SOF mobility aircraft.

The first chapter of this paper delivers a history of U.S. Special Operations Command (USSOCOM) and important background information on its roles and missions. The chapter provides a brief history to better acquaint the reader with the organizations referenced throughout the paper. Second, the chapter examines SOF budgeting and the means available for SOF to manage SOF-peculiar equipment. Next, the chapter provides USSOCOM's mission statement, priorities and core capabilities to gain perspective on the importance of SOF mobility and the

need for a next generation SOF air mobility platform. Finally, this chapter discusses the role of AFSOC, as USSOCOM's air component, and the platforms typically used to support SOF operators. Additionally, the chapter includes information on how AFSOC aircrews accomplish mobility missions, to help frame the need for the next generation airlifter.

The second chapter examines current problems with SOF air mobility capabilities. The discussion begins with an overview of the aging AFSOC air fleet and technology that is nearing obsolescence. The chapter then presents SOF aircrafts' main problem, rapidly evolving and proliferating air threat systems. Air threats are examined in depth, then anti-access, area denial strategies are detailed, as all are an important part of the argument for a next generation SOF mobility platform.

The third chapter identifies solutions to the problems presented in the previous chapter on new threats and strategies. The chapter examines the current resourcing paradigm for USSOCOM to procure a new SOF air mobility system to defeat emerging threats. Then, the chapter presents an alternative option of teaming with another command to develop a future mobility platform. The chapter concludes by presenting the case for a new stealth/low observable air mobility platform.

The final chapter discusses some problems and advantages to developing the next LO platform. The largest obstacle is the current defense budget cuts and fiscal realities. However, there is ample evidence, even with reductions in defense spending, that USSOCOM and AFSOC should be able to procure a new SOF airlifter. The chapter presents the case for breaking the current SOF paradigm of resourcing by allowing senior defense officials to change the process. Finally, the chapter discusses advantages for the rest of the Department of Defense (DoD) in allowing SOF to develop its own next generation airlifter.

## **Chapter 1**

### **History and Background Information for United States Special Operations Command**

#### **Birth of a Command**

USSOCOM was born of legislation introduced by Senators Sam Nunn and William Cohen, both members of the Senate Armed Services Committee. Nunn and Cohen had support from the House of Representatives by Congressman Dan Daniel, who was the Chairman of the Readiness Subcommittee of the House Armed Services Committee. Together, they pushed the bill, attached as a rider to the 1987 Defense Authorization Act, amended the Goldwater-Nichols Act and signed into law in October of 1986.<sup>1</sup>

Prior to the Goldwater-Nichols Act, SOF suffered a decade and a half of deterioration in the Post-Vietnam Era. The period was marked by considerable distrust between SOF and the conventional military, and by significant funding cuts for special operations.<sup>2</sup> For the first time, this landmark legislation mandated that the President create a unified combatant command. This command would be a joint endeavor, comprised of the US Army, Navy and Air Force elements. The Command, led by a four-star Flag Officer, with a new Assistant Secretary of Defense for Special Operations and Low-Intensity Conflict was responsible for the joint training, resourcing, and education of all US SOF assets.<sup>3</sup> In a speech at the activation of USSOCOM, Admiral William J. Crowe, the Chairman of the Joint Chiefs of Staff (CJCS), said, “First, break down the wall that has more or less come between SOF and the other parts of our military, the wall that some people will try to build higher. Second, educate the rest of the military—spread a recognition and understanding of what you do, why you do it, and how important it is that you do



it. Last, integrate your efforts into the full spectrum of our military capabilities.”<sup>4</sup> With this charge by the Chairman, USSOCOM was born and SOF had the foundation to grow as an integral part of the United States military.

### **Budget**

The Goldwater-Nichols Act enacted another first for the U.S. military. Besides establishing USSOCOM as a stand-alone, joint, unified command, it also gave the fledgling command control over its own checkbook. Before Goldwater-Nichols, the services managed resourcing of all commands through the Future Years Defense Program Structure (FYDP), “The Future Years Defense Program is the program and financial plan for the Department of Defense as approved by the Secretary” and is “a computerized database that summarizes forces, resources, and equipment associated with all DoD programs approved by the SECDEF.”<sup>5</sup> The FYDP is a key part of the overall Planning, Programming, Budgeting, and Execution (PPBE) process, which occurs annually to synchronize DoD’s resourcing needs and priorities for approval by the President and Congress. For internal DoD management purposes, eleven Major Force Programs (MFP) divide the FYDP. “A Major Force Program (MFP) reflects a macro-level force mission or a support mission of DoD and contains the resources necessary to achieve a broad objective or plan. It reflects fiscal time-phasing of mission objectives and the means proposed for their accomplishment.”<sup>6</sup> The Services use these MFPs to manage resourcing of construction, research and development, and major acquisitions. Before the Goldwater-Nichols Act, there were only ten MFPs.

The Services receive funds, via the MFPs, after Congress approves the President’s budget. As an example, if the Air Force requests a new airlifter and the request is approved by Congress, money is then channeled to MFP-4, the Major Force Program associated with mobility

forces for procurement. MFP-2 is also commonly used by the Services and funds general purpose forces. Prior to the 1986 legislation, USSOCOM received money through this process by having the Services request and control budgeting for USSOCOM. The process contributed to a lack of resourcing for SOF, prior to the stand-up of USSOCOM. “The responsibilities of managing MFP-11 and developing and acquiring special operations peculiar items made USSOCOM unique among the unified commands. These responsibilities—dubbed “service-like”—had, heretofore, been performed exclusively by the Services. Congress had given the command extraordinary authority over SOF force structure, equipping, and resourcing.”<sup>7</sup> The 1986 legislation created the eleventh MFP, (MFP-11) and gave USSOCOM control over its own resourcing, so that SOF would not lose priority in the Services’ budgets, as had happened so frequently in the past.

### **Missions of USSOCOM**

Since its inception, USSOCOM, “as delineated in the 1987 Joint Chief of Staff (JCS) Manual 71-87, was to prepare SOF to carry out assigned missions and, if directed by the President or the Secretary of Defense, to plan for and conduct special operations. Mission responsibilities were:

- Develop SOF doctrine, tactics, techniques and procedures
- Conduct specialized courses of instruction for all SOF
- Train assigned forces and ensure interoperability of equipment and forces
- Monitor the preparedness of SOF assigned to other unified commands
- Monitor the promotions, assignments, retention, training, and professional development of all SOF personnel
- Consolidate and submit program and budget proposals for Major Force Program 11 (MFP-11)
- Develop and acquire special operations peculiar equipment, material, supplies, and services”<sup>8</sup>

In the 25 years since it was established, little has changed in basic mission responsibilities for USSOCOM. However, after September 11, 2011 (9/11), the Secretary of Defense, then Donald

Rumsfeld, added the responsibility of synchronizing the Global War on Terror (GWOT).<sup>9</sup> This critical mission area made USSOCOM responsible for conducting and synchronizing operations against global terrorist networks--a key mission area and responsibility. Prior to this charge, USSOCOM only provided forces to other combat commanders for executing these missions. Now, USSOCOM was tasked to deal with the global threat of extremist groups and terror networks.

To execute these mission responsibilities, USSOCOM has maintained a broad mission statement. The mission statement has evolved with each commander of USSOCOM and provides DoD with the focus of USSOCOM. DoD understands that USSOCOM must live up to its unique mission responsibilities, so there is no need to spell out each in a mission statement. Instead, Admiral William H. McRaven, the current Commander, USSOCOM, sums all responsibilities in USSOCOM's new mission statement; USSOCOM will "Provide fully capable special operations forces to defend the United States and its interests. Plan and synchronize operations against terrorist networks."<sup>10</sup> From this mission statement, the Commander addresses his priorities to achieve it.

The Commander's priorities are important in achieving USSOCOM's mission statement, but just as importantly, the priorities give a vector or broad guidance to the headquarters and subordinate commands in achieving the Commander's vision. To meet USSOCOM's mission statement, Admiral McRaven directed that the command focus on three areas. The first priority is to deter, disrupt, and defeat terrorist threats. The second is to develop and support our people and families, and the third priority is to sustain and modernize the force.<sup>11</sup> Each priority has sub-objectives that guide the accomplishment of that particular priority. This paper primarily focuses on the third priority, sustaining and modernizing the force. To accomplish that priority, Admiral

McRaven has directed that SOF equip the operator, upgrade SOF mobility, and obtain persistent intelligence, surveillance, and reconnaissance (ISR). These priorities focus the Command in executing its core operations and activities.<sup>12</sup>

The SOF core operations and activities define the capabilities that SOF provides to the combatant commanders and the nation. These core capabilities are the specialties that SOF brings to any joint fight. According to the USSOCOM 2014-2018 Strategic Capabilities Guidance, the USSOCOM core operations include: Counterinsurgency, Counterterrorism, Counter Weapons of Mass Destruction, Unconventional Warfare, Foreign Internal Defense, Stability, and Support to Major Combat Operations. The SOF Core Activities include: Direct Action, Special Reconnaissance, Security Force Assistance, Military Information Support Operations, Civil Affairs Operations, Interdiction and Offensive Countering Weapons of Mass Destruction (CWMD) Operations, Hostage Rescue and Recovery, SOF Combat Support, SOF Combat Service Support, and Preparation of the Environment.<sup>13</sup> To execute these core mission areas and activities, USSOCOM relies on its component commands. As previously mentioned, USSOCOM was originally comprised of Air Force, Army and Navy personnel. In 2007, the command incorporated U.S. Marine Corps special operations forces. Each component has its own specialties and focus areas that contribute to the joint team. However, this paper will focus on Air Force Special Operations Command (AFSOC) and the forces they provide to Combatant Commanders, routinely referred to as Air Force Special Operations Forces, or AFSOF.

### **Air Force Special Operations Command**

The role of AFSOC is to provide combat ready AFSOF to the Commander of USSOCOM and the Geographic Combatant Commanders to execute and support global SOF missions. AFSOC's core mission areas are specialized air mobility; precision strike; battlefield

air operations; intelligence, surveillance, and reconnaissance; agile combat support; command and control of SOF; aviation foreign internal defense, and information operations/military information support operations.<sup>14</sup> AFSOC accomplishes these missions with specially trained aircrews, ground operators, and support personnel, using a variety of platforms. AFSOC executes the bulk of its missions by flying in support of other component special operations forces. Specially modified C-130 aircraft execute a majority of these SOF missions. AFSOC relies on the AC-130 for strike missions, the MC-130P for helicopter/tilt rotor air refueling, the MC-130H and CV-22 for SOF mobility, and a multitude of unmanned vehicles for ISR. AFSOC also maintains a fleet of smaller aircraft to perform intra-theater airlift, in support of SOF. The “M” in the prefix to C-130 simply denotes that the aircraft is specially modified or a “multi-mission” aircraft and is the most common prefix for a SOF-modified aircraft in AFSOC. The “A” prefix denotes an attack airframe.<sup>15</sup> The CV-22 is AFSOC’s newest mobility platform and conducts resupply, infiltration and extraction of SOF. A tilt-rotor aircraft allows the CV-22 to fly like a C-130, but land and takeoff like a helicopter.

Thus far, this paper has only detailed USSOCOM’s history, however, AFSOF airmen have relied on 1960’s era MC-130 aircraft to accomplish their missions. Coupled with the aircraft systems, aircrew rely on intensive mission planning/route study, the cover of darkness, and very low flight profiles to avoid potential threats and to maximize tactical surprise. AFSOC “aircrews use the concept of “detection avoidance navigation/threat avoidance navigation” (DAN/TAN), which emphasizes, first and foremost, undetected (clandestine) flight operations. If an aircraft can avoid detection, then the risk to that aircraft is negligible.”<sup>16</sup> Near terrain flight, the cover of darkness, and proper flight planning and preparation have, thus far, provided AFSOC aircrews the advantage they need to perform high-risk missions in defense of our

nation's interests. However, the time has come to add a new LO SOF mobility platform to the tactics to keep in front of emerging threat technology. As retired Major General John Alison said, "What we should all know has been evident ever since we had airplanes: mobility is power. Mobility is something you do not want to be without. If we can go where the enemy can't go, we have power over him. Air Force power is U.S. power."<sup>17</sup> Along the same lines, SOF air mobility is critical to the accomplishment of SOF missions. One cannot accomplish the mission, if one never gets to the objective; SOF air mobility is SOF power.

## **Chapter 2**

### **Problems With and For Current SOF Air Mobility Systems**

#### **Aging Systems**

Now in its sixth decade of operational use, the MC-130 still provides clandestine infiltration, extraction, and resupply of SOF.<sup>18</sup> The MC-130H Talon II is the newest of the venerable fleet. Using MFP-4 funds, the Air Force purchased C-130H aircraft in the late 1980s and using MFP-11 funds, AFSOC and USSOCOM modified the aircraft to conduct and support special operations as the new MC-130H Talon II.<sup>19</sup> The MC-130H Talon II is the most modern of the AFSOC MC-130 fleet and is now 22 years old. Operations in Iraq and Afghanistan have taken a heavy toll on the AFSOC fleet, affecting aircraft maintainability and availability.<sup>20</sup> Most AFSOC aircraft have reached the end of their designed service life and/or are rapidly approaching that point. In some cases, replacement parts are no longer available and must be manufactured, thus increasing downtime.<sup>21</sup> As a result, AFSOC is procuring the new C-130J to replace the aged MC-130 fleet. The new designation will be the MC-130J and it will conduct helicopter refueling and SOF mobility needs. The MC-130J will certainly slow the aging of AFSOC's fleet and make it easier to maintain. However, the question we must ask is will it be enough to counter tomorrow's and, in some cases, today's threats? AFSOC needs the next generation LO SOF mobility aircraft.

AFSOC's newest light to medium lift mobility platform is the CV-22 Osprey. The average age for the CV-22 is 4 years, making it a modern aircraft.<sup>22</sup> The CV-22 is adept at its current mission, but still lacks the ability to defeat future air defense systems. It is a great platform for today's missions, particularly in permissive environments, such as Afghanistan and

Iraq. This paper does not imply that current operations are not hostile, but they are permissive, as there are no active air defense networks. The problem with the CV-22, although considered a transformational aircraft, is that the vision for it and its technology are now approaching 30 years old.<sup>23</sup> Like the MC-130, the CV-22 can operate in a low to medium threat environment, but will it be enough against future threats?

Not only is the technology inherent in AFSOC aircraft getting older, the global threat technology is advancing. AFSOF aircrews use detailed and extensive pre-mission intelligence data for planning, take advantage of low-altitude, terrain flying, and fly under the cover of darkness to accomplish current missions. Night flying, ideally in adverse weather, degrades the enemy's threat-detection capabilities, without degrading AFSOC aircraft's capabilities.<sup>24</sup>

However, AFSOC "aircrew tactics for clandestine operations are at or near their limit."<sup>25</sup>

AFSOC aircrews already fly as low as possible, given current technology and safety concerns; there is nothing to add to the current fleet to make it feasible to fly any lower. Additionally, the proliferation of night vision devices throughout the world, no control over the weather, and advancing radar technology, renders AFSOC's technological advantage almost at an end. Both the advancing threat, and aging aircraft and technology, hamper chances of penetrating hostile airspace for future SOF missions. To gain an appreciation of the challenge associated with penetrating hostile airspace and the need for a new LO SOF mobility platform, one only needs to examine the technology that poses the threat to future SOF missions.

### **Threat**

Although AFSOC is taking steps to reduce the age of the fleet, the technology of the fleet is not keeping pace with emerging threat systems designed to counter U.S. airframes. Other Air Force Major Commands, like Air Combat Command continue to advance in technology to keep



pace with emerging threats. Aircraft like the F-22, F-35, and B-2 all utilized LO technology to defeat the increase in threat technology. Newer AFSOC aircraft have not utilized LO and do not include new technology to defeat emerging threats. In his article, “The Advanced Special Operations Air Mobility Platform (M-X), The Time Is Now”, Col William Saier states, “With each passing year, the time when [AFSOC] aircraft will no longer be able to clandestinely penetrate and survive hostile airspace draws closer and closer.”<sup>26</sup> AFSOC gave a detailed account of emerging threats in a study that is nearing ten years old titled, “AFSOC’s Way Ahead.” Unfortunately, the document is classified and cannot be quoted in this paper. However, Saier extracted the following unclassified information for discussion.

**Threats to Aircraft.** The next 25 years will see the proliferation of infrared (IR), radar-guided, and directed energy (DE) threats what will render many existing aircraft obsolete by the end of this period. Between DE and radar-guided threats, current AFSOF aircraft will have survivability challenges in the years 2016 and beyond. This evolving threat has the potential to significantly challenge the capability for SOF to achieve tactical surprise through clandestine air mobility due to the increasing technological capability of passive aircraft detection at further distances.

**Infrared.** IR man-portable surface-to-air missiles, already a significant hazard to AFSOC aircraft, will be an increasingly dangerous threat as more capable missile systems with advanced counter-countermeasures proliferate. Furthermore, the traditional AFSOC tactic of avoiding MANPADS [Man-portable air defense system] by operating mostly at night will become less effective as our enemies acquire more night vision devices.

**Radar Guided.** Emerging as a serious threat to AFSOF aircraft, the technology in radar-guided missiles is rapidly improving. Systems like the SA-10, SA-11, SA-12, and SA-20 (formerly SA-10C) are formidable systems capable of engaging targets at long ranges and at low altitudes. Recent articles in military journals describe the next generation of Russian-designed missile systems having ranges of over 240 nautical miles, altitude capability down to 1-meter above the ground level at those distances, and the capability of outmaneuvering most aircraft. Many of today’s missiles and most future radar missiles will incorporate various types of anti-jamming technologies, which make them difficult to defeat.

**Directed Energy.** High-energy lasers will transform the battlefield in the far term. Lasers capable of shooting down aircraft have already been fielded by some

nations. As a result, by the 2020 time frame, detection may become synonymous with instant aircraft destruction in some parts of the world. Proliferation of laser technology is expected to become worldwide in the next 30 years.<sup>27</sup>

Even with AFSOC acquiring new aircraft, the airframes are not new technology. They are the same type of aircraft that AFSOF has flown for 45 years. The newer airframes are not the leap in technology needed to defeat advancing threats. Additionally, these definitions of the threat are nearing ten years old and the nation has done little to address the problem for SOF aircrews. Col Saier posited that these threats posed a serious problem in 2005 and that the nation needed to address them then to be prepared for 2016 and beyond. Now his argument is even more imperative. To meet emerging threats, the United States can no longer delay developing technology to counter potential adversaries. AFSOC needs the next generation LO SOF mobility aircraft to defeat these emerging and proliferating threats.

### **Anti-Access, Area Denial**

Coupled with emerging and proliferating threats, a rising concern for U.S. policy makers and military strategists is the concept of Anti-Access, Area Denial strategies, commonly referred to as A2/AD. Strategists first formulated the concept of A2/AD around the turn of the century. “In 2003, the Center for Strategic and Budgetary Assessments (CSBA) defined *anti-access* as enemy actions which inhibit military movement into a theater of operations, and *area-denial* operations as activities that seek to deny freedom of action within areas under the enemy’s control.”<sup>28</sup> Andrew Krupenivich continued to produce CSBA papers, through 2010, all focusing on the A2/AD concept. Although the wording changed slightly, the main idea in anti-access is that an adversary will inhibit military movement into a theater of operations, while area denial seeks to deny freedom of action in the theater.<sup>29</sup> The promulgation of the threats is key to effective A2/AD adversary strategies.

This A2/AD strategy takes on renewed emphasis when viewed through potential adversaries employing it. Consistently cited in recent publications is the threat from potential future adversaries that already possess this capability, namely Iran and China. In his article titled, “The Evolution of Modern Warfare”, Major Christopher McCarthy sums the growing threat from China when he stated,

Today, China has emerged as a regional power with robust *Anti-Access/Area Denial* (A2/AD) capabilities and unclear political and military intentions. For this reason, while the U.S. and China strive for military and political cooperation, a close examination of emerging Chinese capabilities reveals several potential challenges to U.S. forces. Chinese anti-access capacity includes a large ballistic missile force designed to attack key point targets, such as air bases and naval facilities. Chinese area denial capabilities consist of advanced counter-maritime and counter-air systems designed to destroy critical mobile assets, such as surface ships and aircraft.<sup>30</sup>

China and Iran are the two biggest threats, with regard to A2/AD, but there are many more.

Besides the threats that a nation could bring to bear, the tyranny of distance is a problem. There are regions of the world where the U.S. does not have basing rights. A non-state actor could commit a hostile act in such a region and take advantage of nearby nation state’s A2/AD and distance to complicate the U.S.’s ability to respond. There is a growing concern amongst U.S. policy makers sensitive to the discussed problems.

Threats from nations possessing A2/AD strategies and capabilities are consistently cited in U.S. strategy documents. The President addressed his concerns in a letter introducing the 2012 Defense Strategic Guidance, “We will ensure that our military is agile, flexible, and ready for the full range of contingencies. In particular, we will continue to invest in the capabilities critical to future success, including intelligence, surveillance, and reconnaissance; counterterrorism; countering weapons of mass destruction; operating in anti-access

environments; and prevailing in all domains.”<sup>31</sup> The 2012 Strategic Guidance is more detailed and lists countering A2/AD as a primary mission of the U.S. Armed Forces for Joint Force 2020.

In order to credibly deter potential adversaries and to prevent them from achieving their objectives, the United States must maintain its ability to project power in areas in which our access and freedom to operate are challenged. In these areas, sophisticated adversaries will use asymmetric capabilities, to include electronic and cyber warfare, ballistic and cruise missiles, advanced air defenses, mining, and other methods, to complicate our operational calculus. States such as China and Iran will continue to pursue asymmetric means to counter our power projection capabilities, while the proliferation of sophisticated weapons and technology will extend to non-state actors as well. Accordingly, the U.S. military will invest as required to ensure its ability to operate effectively in anti-access and area denial (A2/AD) environments.<sup>32</sup>

The 2010 Quadrennial Defense Review provides another point of reference for U.S. strategic priority on this growing threat.

Prudence demands that the Department prepare for possible future adversaries likely to possess and employ some degree of anti-access capability—the ability to blunt or deny US power projection—across all domains. Given the proliferation of sophisticated weapons and technology, smaller states and some non-state actors may be able to acquire and employ longer-range and more precise weapons. Future adversaries will likely possess sophisticated capabilities designed to contest or deny command of the air, sea, space, and cyberspace domains.<sup>33</sup>

Naturally, with countering A2/AD strategies a national priority and mission for the U.S. Armed forces, USSOCOM and AFSOC must support this growing emphasis.

A cornerstone of U.S. military airpower is the ability to rapidly deploy and employ our forces to any part of the globe, often into heavily defended regions. AFSOC, as the air component for USSOCOM, must be able to deeply penetrate into denied and hostile airspace to conduct SOF missions. With the use of a large package of counter A2/AD aircraft, like the B-2, F-22, and F-35, SOF can penetrate denied airspace, but a large armada of aircraft is counter to executing a clandestine mission and may carry many unforeseen consequences. U.S. adversaries are quickly gaining the advantage in employing strategies like A2/AD, through emerging air threat technology and aging U.S. AFSOF systems. The question remains, what can be done

about countering A2/AD? As referenced, current strategic documents have placed emphasis on countering this strategy. In response, the U.S. Air Force has invested in next generation fighters and bombers to penetrate into denied airspace, but what is being done for SOF? Col Saier said the time is now, for developing technology to counter the growing threats. Again, that was almost a decade ago. The question is what will the U.S. do now to ensure AFSOC can counter the growing threat and to penetrate A2/AD regions to execute our nation's most pressing missions?

## **Chapter 3**

### **Solutions for 2015 and beyond**

Developing new technology is the only solution to counter a new generation of threats and A2/AD. The U.S. needs to invest in developing the next generation LO SOF mobility aircraft. As mentioned, AFSOC aircrews already use detailed planning, the cover of darkness and terrain flight to counter past anti-aircraft defenses. However, current AFSOC systems soon will not be able to accomplish SOF missions with the systems AFSOC has relied on for the past 25 years. Col Saier sums the argument best when he wrote,

While AFSOC continues to modify its Combat Talon aircraft [MC-130] with enhancements to increase mission effectiveness and survivability, it just won't be able to make the radar detectability of such a huge aircraft with a large radar cross section any better. Couple that with the fact that aircraft and aircrew can't fly any lower or any faster, night can't become any darker, adverse weather isn't something one can conjure up when needed; there are areas in the world where AFSOC may need to go where there is no terrain to hide in; and one quickly comes to the conclusion that AFSOC needs a new LO [low observable] aircraft to remain relevant in the future.<sup>34</sup>

Stealth technology or LO technology is the answer to countering emerging threats. The defense industry and the U.S. Air Force have used this technology in the past with the U.S.'s latest generation of bomber and fighter aircraft. The time is upon us as a nation to engineer a design for a SOF mobility asset that takes advantage of LO technology.

### **Status Quo**

USSOCOM has a limited budget to develop SOF specific capabilities and procure SOF peculiar materiel. USSOCOM heavily relies on the Services to procure "Service Common" materiel under MFP-4, which funds Service common capabilities, such as the C-130 and the V-22 aircraft.<sup>35</sup> Using MFP-11 funds, USSOCOM then modifies the Service provided system, with

SOF-unique capabilities, such as defensive systems, navigation systems, airdrop systems, and other SOF-unique requirements.<sup>36</sup> Using MFP-11 funding, USSOCOM takes the C-130 and converts it to the SOF MC-130.<sup>37</sup> While the Services each receive approximately 100 billion dollar budgets, annually, USSOCOM manages a budget that has recently increased from a couple billion to, approximately 10 billion dollars, annually to support its combined Army, Navy, Marine, and Air Force “SOF peculiar” requirements.<sup>38</sup> USSOCOM and AFSOC are dependent on the Services when it comes to acquiring and fielding major new weapons systems, such as the C-130 and V-22 aircraft.<sup>39</sup> Additionally, The Air Force does not compete with the other Services when setting their budget priorities. AFSOC, however, must compete for aircraft modernization money with all USSOCOM components. The cost of aircraft modernization technology is high, making it extremely difficult to use only MFP-11 money to develop or procure new technology.

A solution to countering the proliferation of advanced anti-access systems may be to modify an existing system. USSOCOM and AFSOC can do as they have always done, take an existing system and modify it with advances in signature reduction and electronic attack. The problem then is identifying the system AFSOC should modify and assessing its limitations. Unfortunately, existing platforms cannot be modified to reduce vulnerability to A2/AD threats. Modification cannot reduce the radar, infrared, or acoustic signatures of the Air Force’s current airlift platforms. Former U.S. Assistant Defense Secretary for Special Operations, Low-Intensity Conflict and now Under Secretary of Defense for Intelligence, Michael Vickers said, “The air defense environments are becoming so threatening, particularly because of these advanced, double-digit [surface-to-air missiles], that it’s driving our air forces – Navy and Air Force – to signature reduction and electronic attack to penetrate those defenses. So, at some point, if I also

want to insert SOF, or if I can only put in a B-2 or its successor, then I'm kidding myself if I think a clever C-130 is going to get in there with terrain-following radar.”<sup>40</sup> To counter emerging threats, USSOCOM will have to break out of its paradigm and create a new platform for SOF mobility.

### **Cooperation on a Joint Tactical Airlifter**

A possible solution for USSOCOM to field a new mobility platform would be to combine with or work jointly with another development team to procure a more technologically advanced platform. Air Mobility Command (AMC), the Air Force command responsible for strategic and tactical airlift has been examining the next generation mobility platform for some time. The addition of the C-17 to the Air Force inventory in the last 20 years has helped the Air Force with strategic lift; however, recent conflict has shown that the Air Force could use more strategic airlifters, especially with the retirement of the venerable C-5. As a result, the Air Force has been researching the next concept, named the Joint Future Theater Lift Concept (JFTL). For the JFTL concept, engineers are hoping to provide a platform that has a much larger volume bay than the C-130, can carry 36 more tons than the C-130, and has a further range, yet can take off and land in about the same amount of runway and on unimproved surfaces.<sup>41</sup> SOF could leverage this existing effort and join with the team developing the JFTL.

However, while it is wise to seek synergy between the two needs, the JFTL simply does not meet the needs of a next generation SOF platform. Although JFTL may meet conventional Air Force and Army mobility requirements, it does not meet the parameters required for SOF.<sup>42</sup> It is much too large of an airframe for inserting small SOF teams on clandestine missions. One of the problems with the C-130 is its large signature, both visual and on radar. To replace the C-130 with a larger aircraft, even with LO technology, would defeat SOF's purpose. In the same



Defense News article referenced earlier, Mr. Vickers states, “Today’s special-forces airlifters are generally upgraded versions of military airlifters, but the idea of taking a transport aircraft that moves GPFs [general-purpose forces] around and then modifying them may be coming to an end. We can no longer think that we can take a C-130 aircraft and make it stealthy.”<sup>43</sup> Instead of trying to produce one airframe that does both the conventional lift mission and SOF specific missions, perhaps synergy can be gained from applying the same concepts to developing different airframes. In the past, whenever the Air Force has combined too many missions on one airframe, usually one or several missions suffer from the tradeoffs that must occur in requirements. Rather than having a less capable aircraft that can marginally perform two very different missions, the Service should spend its time and resources developing a different platform capable of supporting the SOF mission to penetrate denied airspace. Certainly, both programs can benefit from studying LO technology and survivability features, but the next SOF platform should be something developed specifically for AFSOC’s SOF missions; future threats demand that it be so.

### **SOF Low Observable Platform**

A counter argument to developing a specialized SOF air mobility platform is U.S. SOF can penetrate an enemy air defense network with the assistance of Suppression of Enemy Air Defense Network (SEAD) aircraft. The U.S. does not need to waste resources developing a LO SOF air mobility platform, as the U.S. joint force is sufficient should the need arise. The problem with a joint force of SEAD aircraft is the size of the package required to accomplish the mission. The exact size will vary, depending on the sophistication of enemy defenses, but it will take several dozens of aircraft, maybe several hundred aircraft with around-the-clock flying. Regardless, to commit the resources required of SEAD, the U.S. will have to commit to total

war. Such a large response may not be politically desirable for U.S. senior leaders. Additionally, the risk of the U.S. losing material and lives increase as the size of the force required to perform a mission increases. A clandestine insertion of SOF better mitigates the risk to U.S. Service Members and eliminates the need for an all-out attack on an adversary.

The best solution to deal with the ever-increasing threat is to develop a stealthy SOF airlift platform, one that takes advantage of LO technology and has increased survivability features. Mr. Vickers recognizes that an LO platform is needed for the future. He said, “By the 2020s, U.S. special forces troops will need a stealthy new airlifter to sneak past ever-improving radar and missile systems into “denied areas.” At some point, serious consideration will need to be given to the development and fielding of a more survivable, long-range SOF air mobility platform that exploits advances in signature reduction and electronic attack.”<sup>44</sup> Moreover, Col Saier argues in his article that three factors affect success in clandestine penetration missions. First, low altitude and terrain masking is key to survivability. The second needed variable is speed and the third is low observable technology. “If AFSOC Combat Talons can’t fly any faster and they can’t fly any lower, then the only way to favorably affect (clandestine penetration missions) is in the area of low observability.”<sup>45</sup> While engineers may be able to design something faster, it is unlikely they can design a lower-flying aircraft, and one is still left with the conclusion that the key variable that has not been addressed is LO technology.

To perform the clandestine penetration mission, AFSOC has concluded that the command requires the following type of aircraft.

**M-X Aircraft:** This conceptual aircraft is required to support and improve SOF rapid global mobility beyond 2015. Reduced overseas basing and anti-access/area denial strategies drive the need for a high-speed, long-range air mobility platform capable of performing clandestine missions in denied, politically sensitive, or hostile airspace. The M-X will be designed to defeat sophisticated integrated air defense systems with low-observable/stealth design technology combined with

advanced air defense systems and electronic countermeasures for increased survivability. The M-X needs “agility in the objective area” which means it must be able to accomplish short take-off and landings and/or hover at medium heights. The declining capability of the aging SOF C-130 fleet to penetrate deep into sophisticated hostile airspace beyond 2015 adds emphasis to this program.<sup>46</sup>

This M-X aircraft, when combined with current tactics, techniques, and procedures, as well as speed and terrain masking would reopen the politically sensitive, denied, and hostile airspace that adversaries are developing and, in some cases, have developed.

## **Chapter 4**

### **Discussion on LO**

#### **Budget Considerations and Strategy Review**

During this period of fiscal constraint, a common theme or argument to counter a new program is that the U.S. military cannot afford to develop a new program. For the most part, this is true; however, in the January 2012, Defense Budget Priorities and Choices, SOF is specifically designated as a protected resource. The document spells out tough choices needed to reduce spending and save costs. Protected are the programs and forces that DoD has decided are the most critical to current and future defense needs. The document states that counter terrorism is a protected capability and investment. Specifically, “Because we will continue to be engaged in counter terrorism operations around the globe, we protected key components of the force that are adept in executing this mission...special operations forces – critical to U.S. and partner counter terrorism operations and a variety of other contemporary contingencies.”<sup>47</sup> Further, the document also protects power projection forces, “We also protected capabilities that allow us to project power in denied environments.”<sup>48</sup> Although we are in a time of fiscal constraint, the defining document on how the U.S. is executing cost saving measures specifically saves SOF and leaves the door open for investing in critical technology, especially when that critical technology is the key to SOF power projection.

In recent years, almost every national security strategy document lists the protection of SOF assets and SOF enablers. The 2011 National Military Strategy states, “Joint special operations forces will remain decentralized and flexible, have regional expertise, and maintain a wide range of capabilities to support our Nation’s counter-terrorism efforts and other missions

that require their unique attributes. We will increase enablers critical for the success of special operations forces.”<sup>49</sup> The 2010 Quadrennial Defense Review mentions declared weapons and vehicles that can break through or outmaneuver anti-access systems as fundamental to our ability to protect our interests and to provide security in key regions.<sup>50</sup> Finally, the latest strategy document, Sustaining U.S. Global Leadership: Priorities For 21<sup>st</sup> Century Defense, declared,

In adjusting our strategy and attendant force size, the Department will make every effort to maintain an adequate industrial base and our investment in science and technology. We will also encourage innovation in concepts of operation. Over the past ten years, the United States and its coalition allies and partners have learned hard lessons and applied new operational approaches in the counter terrorism, counterinsurgency, and security force assistance arenas, most often operating in uncontested sea and air environments. Accordingly, similar work needs to be done to ensure the United States, its allies, and partners are capable of operating in A2/AD, cyber, and other contested operating environments.<sup>51</sup>

Regardless of the fiscal climate, the policy makers and defense strategists are committed to resourcing SOF and technology allowing the U.S. to project power and force its will into denied regions.

### **Resourcing**

The largest impediment to resourcing a new LO platform for SOF lies in the current resourcing system. As previously discussed, SOF relies on the Services to provide platforms, and then USSOCOM uses MFP-11 dollars to modify the platform with SOF-unique capabilities. Mitigating the future mobility gap may be beyond the Air Force and USSOCOM’s ability. USSOCOM has informed AFSOC that the mobility problem belongs to the Air Force, as a force provider, and should be addressed through MFP-4 funding. On the other hand, the Air Force states that this is a SOF unique issue and MFP-11 funds should address the problem.<sup>52</sup> The final report for one of the two Air Force Title 10 war games suggested that this problem was beyond USSOCOM’s capacity to resolve and would require the efforts of several agencies.<sup>53</sup> The

existing DoD Budgeting and Programming Process will not address this challenge. Resolving this difficult issue will require senior leadership involvement and the concerted efforts of several organizations beyond the Air Force and USSOCOM.<sup>54</sup> To fund and develop the next generation SOF air mobility asset, senior national leadership will have to direct and provide funding to the Air Force to develop and procure the next SOF mobility asset. Additionally, the senior leadership will have to fence the money for the SOF LO mobility aircraft, so it does not compete with other programs and risk dropping in Air Force priorities.

### **General Purpose Gains from SOF Procurement**

General purpose forces routinely gain from SOF procurement. Earlier, the paper discussed possible synergies in joint development of the next SOF mobility platform. Although, these synergies are possible, historically, the inverse is usually true. General purpose forces gain more from SOF developments. One only needs to examine the spread of night vision goggle (NVG) technology for the 25 years. Originally, NVGs were a SOF-specific capability, used to accomplish only the most sensitive missions. Now GPF aircrews routinely fly with NVGs and the benefit to the U.S. military as a whole is undeniable. One can also examine the evolution of the infantry soldier in the past two decades to gain an appreciation. SOF operators used to look different and have significantly different equipment than their conventional counterparts. However, since the events of 9/11, it is difficult to differentiate between a SOF operator and a conventional infantryman. The weapons originally developed for SOF are now the mainstay in the general purpose forces. Similarly, the advances in camouflage battle uniforms and other protective gear had their genesis in SOF.

More specific to aircraft procurement, the Marine Corps developed and procured the V-22. AFSOC and USSOCOM applied MFP-11 funding to add fuel tanks and defensive avionics

to the V-22 and developed the CV-22. The Marine Corps liked some of the SOF modifications to the V-22 and have incorporated them into the latest “block” versions of the Marine Corps V-22. Were SOF to have the lead on procuring the next generation of SOF mobility, similar advances and advantages would likely pass to the conventional forces.

An accelerated development and procurement of the SOF mobility aircraft may provide the Air Force with technology that can be additive to the development of the JFTL or may provide a different direction for the next strategic airlifter. In his Posture Statement to the Senate Armed Services Committee, then USSOCOM Commander, ADM Eric Olson stated, “As a force that operates from the tropics to the Arctic regions, from under water to high elevations, and from peaceful areas to violent combat zones, Special Operations Forces serve as an ideal “control group” for Service R&D investments that can result in significant benefits across DoD.”<sup>55</sup> Defense officials need to allocate money to the Air Force and/or USSOCOM and direct the Research and Development community to begin development of the next generation SOF LO mobility platform. The entire DoD will benefit from the procurement of this platform.

## **Chapter 5**

### **Conclusion**

The proliferation of threat systems and A2/AD strategies make performing SOF mobility missions increasingly complicated and limit the capability to defeat air defenses and penetrate into denied airspace. Combined with an aging inventory ill suited to evading these threats, AFSOC and USSOCOM must look to technology to defeat the more modern threat systems and anti-access strategies. The latest generation of aircraft gains some advantage in speed, but aircrews cannot fly any lower, nor is darkness an advantage in an era of advanced technological surveillance. The best answer to penetrate future, denied regions is in stealth or low observable technology. The U.S. needs to invest in procuring the next generation LO SOF mobility aircraft, now.

There are three options for furthering AFSOC's ability to conduct clandestine missions. First, USSOCOM can rely on the current system of modifying available Air Force aircraft with SOF-peculiar equipment, but there is not a current airframe that can be modified with the necessary technology to penetrate, deeply, into a modern air defense network. Next, AFSOC and USSOCOM can join the team working on the JFTL concept to develop an airframe that supports both strategic lift and SOF insertion and extraction missions. Although this seems a viable solution, the differences in requirements for the two programs quickly outweigh possible synergies. The best solution is for senior defense officials to champion the case for a new LO SOF mobility platform.

National strategy documents already prioritize the SOF mission and identify the need for maintaining a very capable SOF. Current fiscal realities and a cut in defense spending seem to



discourage talk of funding a new capability or procuring a new platform. However, the case for improving SOF enablers and funding SOF programs is well documented in recent strategic guidance and budget priority documents. Regardless of the fiscal situation, SOF will get the support it needs from national leadership to maintain its dominance in asymmetric warfare.

The only obstacle remaining for funding and procuring the next generation SOF air mobility asset is in the current resourcing construct. USSOCOM will need senior defense officials to champion the SOF airlifter to provide funds and direction to the Air Force or directly to USSOCOM to develop the platform. This will be a shift in the way MFP-11 funds have been used in the past. Rather than modifying an existing airframe, Congress will have to allocate additional funding into MFP-11 for the sole purpose of designing and procuring the next generation LO SOF airlifter. Once done, not only USSOCOM, but also the rest of the DoD will benefit from the technology produced by this platform.

In summary, AFSOC, USSOCOM, and the nation need the next generation SOF air mobility platform to maintain military dominance in future denied regions. Numerous strategic documents support the case, while the fielding of the platform directly supports ADM McRaven's priority of sustaining and modernizing the force through upgraded SOF mobility. In 2005, Col Saier, said, "the time is now," for fielding the advanced special operations air mobility platform.<sup>56</sup> He was right then and now the need is more imperative, as Mr. Vickers said, "such a development effort is typically a decade or so of effort."<sup>57</sup> The nation is already behind; we must begin developing the next generation LO SOF mobility for our nation's most pressing special operations requirements.

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